



ENVIRONMENTAL PROTECTION AND MARITIME TRANSPORT POLLUTION CONTROL PROGRAM IN THE GULF OF HONDURAS

TECHNICAL SHEET

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DESIGNATION OF THE GULF OF HONDURAS AS PARTICULAR SENSITIVE SEA AREA (PSSA)

INTRODUCTION

The term “Sensitive Sea Area (SSA)” defines any marine body of water that needs special protection due to recognized technical reasons related to oceanographic and ecological attributes and to particular maritime traffic conditions which may endanger these attributes. Special protection measures are developed within the area to prevent sea contamination through hydrocarbons, hazardous liquid substances, or wastes (according to the circumstances). A “Particularly Sensitive Sea Area (PSSA)” is an area requiring higher standards of environmental protection.

An effective set of international regulations or conventions such as CONVEMAR address the State parties’ role regarding marine economic zones and sea areas management and environmental protection. They define the parties’ jurisdiction and place an obligation on them to adopt necessary measures to protect and preserve the marine environment.

The International Maritime Organization (IMO) in order to achieve its goal to protect the marine environment has developed the following instruments:

1. The International Convention for Human Life Protection on the Sea (SOLAS) Convention, tailored to the shipping industry safety requirements, expected to generate a positive indirect effect upon environmental protection.
2. The International Convention for the Prevention of Pollution from Ships (MARPOL) addresses basic environmental protection standards related to threats posed by operational and accidental discharges.
3. Regulations aimed in particular at restructuring maritime traffic flow, which improve and reinforce navigational safety and contribute to protect and preserve rare or fragile ecosystems.
4. Designation of Sensitive Sea Areas (SSA) and Particularly Sensitive Sea Area (PSSA).



Ship on the Bay, Puerto Cortes, Honduras

GUIDELINES

According to the guidelines for the identification and designation of a Particularly Sensitive Sea Area, a submission must meet three key elements:

- 1. The area must include relevant ecological, socioeconomic, and/or scientific characteristics, such as, critical habitats, representative ecosystems, high diversity, rare or unique ecosystems, vulnerability to degradation by natural events or human activities, baseline or/and a monitoring system, constitute a cultural heritage, etc.***

The Gulf of Honduras environmental problems have a transboundary scope. Belizean, Guatemalan, and Honduran waters blend within the semi-enclosed area. Tributaries from the three countries flow into the gulf carrying increasing amounts of sediments and pollutants. Existing oceanographic conditions, seasonality and weather; contribute to spread environmental consequences throughout the region. Due to its susceptibility and potential to spread consequences, the countries shall develop a strategic approach to prevent and control contamination inside the gulf. Implementing actions designed to counteract pollution on its source, monitoring tendencies, and building sustainable systems to coordinate management and environmental protection within the region.

The complex dynamics among coastal and open waters processes, ocean currents and fronts, create a highly diverse and unique ecosystem within the Gulf of Honduras. The region encloses a wide variety of coastal marine waters. Along the Belizean coastline estuaries, lagoons, barrier beaches, intertidal salt marsh areas, keys, mangrove forests, seagrass beds, patches, and barrier reefs may be identified. The Guatemalan coastal waters are also very diverse. Dense mangrove forests grow along estuaries and bayous' mouths (Dulce River), along Amatique Bay's shallow water depths and seagrass beds (La Graciosa Bay), along the sandy region of Manabique Peninsula, and along the beaches leading to the mouths of the Motagua, San Francisco, and Piteros River. The Honduran coastal zone is characterized by vast beaches, mangroves, lagoons, estuaries and off-shore keys. The Gulf of Honduras high degree of structural complexity supports

a multifaceted community of species that contribute to the ecological significance of the region.



Panoramic View of Amatique Bay in Guatemala

The Gulf of Honduras constitutes a very productive aquatic habitat. Its proximity to mangroves, marine seagrasses, and coral reefs and a distinctive combination of nutrients –terrestrial nutrients transported by rivers and nutrients carried by ascending currents– creates a rich environment that shelter diverse and numerous marine species. The gulf’s shallow depths support commercially important communities such as prawns, common lobsters, seashells, and scale fish as well as the biggest West Indies manatee population found in the Caribbean region.

The Gulf borders west to the Mesoamerican Barrier Reef System (MBRS). A highly diverse unique ecosystem, extending through a broad territory and weaving a complex variety of reef systems and luxuriant corals kept in a pristine condition. The Reef System is the second largest barrier reef in the world extending through 250 Km and covering 22,800 km². It constitutes a rich coral environment, assembling highly diverse reef types: lagoon reefs (atolls), fringing reefs, and barrier reefs. The Gulf extends along the southern fraction of the system. Fresh water inflows from the Motagua, Sarstun, and Dulce River contribute to the high degree of patchiness in the reef assemblages. Sediments (natural sediments as well as those derived from human activities) fluxes and characteristics play a key role in the Reef System productivity, justifying the transboundary nature and scope of the Project.

According to estimates, 12.4 million people inhabit near the coasts of the hydrographic watersheds that flow into the Gulf of Honduras. This amount constitutes 70% of the population of the three countries. Of this number, approximately 2 million people live in vast urban areas: Guatemala City, in Guatemala, and San Pedro Sula, in Honduras. Small groups of culturally diverse populations reside along the Gulf’s coasts, about half million people of different ethnicities and races predominating the garifuna, the mestizo, and the criole. These communities have a direct effect upon coastal and marine ecosystems.

The gulf’s coastal region economy is based on two main activities: fishery (commercial and artisanal fishery) and agriculture. The most important exportation product of the region – banana – derives from agricultural production. Farmers utilize intensive cultivation methods such as fertilizers and other chemicals. Polluted surface drainage water or hazardous materials which have trickled into the groundwater eventually reach

the bay accelerating algae formation and consequently the rate of oxygen depletion in water. The region is experiencing a period of economic growth. The combination of two events, the expansion of the road network which improved the access to previously uncommunicated areas and escalating infrastructure investments, have caused other activities such as, tourism, aquaculture, and industry to flourish. This in turn has intensified workforce migration towards rural areas along the coasts of the Gulf of Honduras.

2. The area must be at risk from international shipping activities. Supporting documentation corroborating the damages or the threats of damage must be provided.

Port facilities in the region possess physical Infrastructure for cargo unloading, storage, and transportation. Ports are equipped for handling containers, bulk and liquid cargo, hydrocarbons, and dangerous chemicals. According to annual handling statistics, 1,700 ships carrying different types of cargo such as liquids and refined petroleum products dock at Puerto Cortes terminals. More than 1,300 ships including tank vessels transporting petroleum disembark in Puerto Santo Tomas de Castilla. Approximately 550 ships, including containers and tank vessels transporting hydrocarbons and chemical products arrive to Puerto Barrios. Belize City Port handles different types of liquid and bulk cargo yet nearly all its trade is shipped by containers. Big Creek shipping operations limit to banana exportation, although, in future plans, it might consider the inclusion of new products. In year 2003, the Gulf of Honduras managed nearly 28% of the maritime port traffic and 20% of merchandise flows within the Central American region (Atlantic and Pacific coasts). Approximately 4,000 ships docked at the gulf in one of its five major ports and their terminals handled more than 12 million metric tons of cargo.



Tank Liner mooring with buoy in Belize City Port

At the present time, most of the trade and flows of merchandise in the Gulf of Honduras are shipped by sea furthermore a favorable evolution in cargo handling rates has been observed. Between 1990 and 1999, the volumes of merchandises handled by Puerto

Santo Tomas de Castilla, Puerto Barrios, and Puerto Cortes increased at an annual rate of 11.09% (1991-1998), 16.50%, and 8.52%, respectively (SIECA, 2001). In 2001, Puerto Cortes almost reached its handling capacity limit and according to statistical projections Puerto Santo Tomas de Castilla and Puerto Barrios will reach their limit in the next few years (SIECA, 2001). Maritime port traffic within the region is expected to boost. Guatemala crude production is growing which translates in an expansion of hydrocarbons exploration and an increase in energy demand within the region. Traffic and handling of dangerous cargo as well as hydrocarbons is projected to increase in the next decade. Simultaneously, during this growth, several projects regarding construction and improvement of maritime facilities will be implemented in the five ports.

The economy of the gulf region is based on its marine resources. Activities such as tourism, aquaculture, and fishery rely on clean water for their operation and sustainability. Port activities such as dredging depend on the volume of sediments discharged into the gulf by streams and rivers. Since economic activities are based on the environment, they directly affect aquatic habitats. Port operations, maritime transportation, and other related industries located upstream are sources of chemical contaminants and sediments that generate negative environmental impacts within the region and contribute to maritime lanes of sedimentation. The Regional Environmental Programme for Central America (PROARCA) conducted two complementary studies reaching to a conclusion that a single spill of 75,000 barrels into Amatique Bay waters may generate long-term economic consequences in the blooming touristy industry along the Guatemalan and Southern Belizean coasts. Additionally, spills into port areas and open waters increase companies' insurance costs as well as port operations dredging costs.

Regarding the gulf's hydrographic assessment, the countries do not have updated and officially approved nautical charts for the region. The formulation of nautical charts and the bathymetric information can contribute to the overall assessment of the condition of the gulf and should be a priority for the ports and governments of the region.

The countries have participated in several international maritime treaties. Among them, the United Nations Convention on the Law of the Sea (UNCLOS), the International Convention for the Prevention of Pollution from Ships (MARPOL), and other treaties related to maritime transport and contamination that have been promoted by the International Maritime Organization (IMO). However, the lack of norm-implementation, clear lines of authority, and coordination among agencies has restricted the effectuality of the inspections and the enforcement of agreements. National engagements contracted in these treaties have not materialized in clear objectives or actions within the region, including the Gulf of Honduras. Conscientious fulfillment of the obligations defined in the treaties will be reinforced by strengthening cooperation and coordination among the involved parties.

Additionally to their condition of signatories of several international agreements Honduras, Guatemala, and Belize have also issued several national laws and other judicial instruments to protect the environment and prevent and control pollution. Although these countries count on a general legal frame to support the Program's activities – leading to counteract marine contamination and improve navigational safety, they have not been consistent in its enforcement. The lack of adequate norms and institutional support at the local and national level, have weakened its enforcement.

3. *There must be measures that can be adopted by IMO to provide protection to the area. This may be achieved through amendments to existing regulations and measures improving protection against threats and the legal basis.*

According to all the factors considered in this document the following associated protective measures have been considered:

- a) Traffic separation schemes. This refers to a restructuring of navigational space as a function of traffic flow, separating opposing streams of traffic through the establishment of new shipping lanes.
- b) Areas to be avoided. This measure refers to a restructuring of navigational space. Closing an area, where navigation is extremely dangerous and/or accidents' prevention is very important, to all ships or to certain sizes or classes of vessels.
- c) Mandatory no anchoring areas. This measure refers to a restructuring of navigational space through the establishment of protected areas where all ships or certain sizes or classes of vessels may not anchor because of the dangerous nature of the area (unstable anchoring bottom) or the irreversible damages to the environment that may be generated by anchor weight or slippage. Only in cases of imminent danger to the vessels or their seafarers this measure may be dismissed.
- d) Areas for ballast water management. This measure refers to the establishment of areas for ballast water exchange. The purpose of this measure is to prevent invading organisms to infest local ecosystems causing irreversible damages.
- e) SO_x (Sulphur oxides) emission control area. At this point, the countries must demonstrate that MARPOL's basic measures do not meet the area requirements of protection. The PSSA designation can only be achieved when the adopted measures provide effective protection to the area. It is neither appropriate nor necessary to designate all marine protected areas as PSSA.
- f) Recommended routes. Previous analyses of the area's actual shipping lanes have provided an overall assessment regarding safer navigational routes. These traffic lanes constitute the recommended routes.
- g) Two way route. This measure refers to the establishment of opposing streams of traffic to guarantee the safety of the vessels in waters where navigating is difficult or dangerous.

An application for a PSSA may only be submitted by an IMO Member Government or Governments.



Aerial view of Big Creek Port in Belize